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To: Mr. W. C. Lloyd
Mr. E. M. Schaaf
Mr. E. A. Soyars

Date: May 29, 1975

From: Mr. E. A. Christopher

FXI
JK

Subject: Coal Strength

Recent investigations have indicated a problem in the testing for Coal Strength. The testing procedure indicated that Multifilter experienced a high percentage of coal strength failures. In our attempts to improve the coal strength of this product, we met with very little success.

As we looked through the various components of this brand, it was noted that the tobacco blend was significantly different. The most obvious difference was the ratio of Bright to Burley in the blend. To test this effect, we made cigarettes using Multifilter blend in Marlboro cigarettes and Marlboro blend in Multifilter cigarettes. The result of this test was that whatever blend went into the Multifilter cigarette construction, we experienced coal strength failures in the order of 50 - 55 percent.

At this point, we reviewed historical data which showed that the harder the filter the higher percentage of coal strength failures. PM Regular with no filter had the lowest percentage failures Marlboro next, then Lights, Parliament and Multifilter again showing the highest percentage of failure. This appeared to be reasonable since a soft tip would absorb more test shock and would therefore, give fewer failures.

The one exception to this series of test was the Saratoga 120's which had even a lower percentage of coal strength failures than the PM Regulars. Since the physical configuration of this cigarette was so completely different from the others, we decided to test the length factor. We ran coal strength tests on Marlboro 100's and B&H 100's from which we obtained values of approximately 40 percent failures. From the same group of cigarettes we cut ½ inch off the tobacco end and retested it. The result was an increase of approximately 15 percent failure. This, of course, indicates that the length of the cigarette is also a factor in coal strength failures.

All data to which we have referred was done on standard four-cycle coal strength tests.

Conclusion

We are convinced that the large number of variables between brands makes coal strength comparison very risky. Since this is

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an extremely sensitive area, I would like to request help from R&D in a complete re-evaluation of the entire coal strength testing program.

E. A. Christopher

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